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DISCHISTODUS DARWINIENSIS (WHITLEY), A VALID SPECIES OF DAMSELFISH (TELEOSTEI: POMACENTRIDAE), DISTINCT FROM *DISCHISTODUS FASCIATUS* (CUVIER)

T. M. Sin, M. M. Teo and Peter K.L. Ng

ABSTRACT. - *Pomacentrus darwiniensis* Whitley, 1928 (type locality Port Darwin, Australia), previously synonymised under *Dischistodus fasciatus* (Cuvier, 1830) (type locality Java), is shown to be a separate species and *P. darwiniensis* is here regarded as a valid species of *Dischistodus. Dischistodus darwiniensis* is distinguished from *D. fasciatus* by having a markedly convex dorsal head profile, strongly serrated adult preopercle and a distinct colour pattern. *Dischistodus fasciatus* is a Southeast Asian species whereas *Dischistodus darwiniensis* is restricted to northwestern Australia.

INTRODUCTION

The most common pomacentrid in Singapore rocky shores and reef flats has long been identified as *Dischistodus fasciatus* (Cuvier, 1830) (Sin et al., 1994). The specimens of *D. fasciatus* from Singapore however, do not agree with the diagnosis and figure of *D. fasciatus* in the revision of the Pomacentridae by Allen (1991), especially with respect to head shape and the presence of a series of black spots behind the opercle and above the base of the pectoral fin. Studies of an extensive series of specimens from Singapore, Peninsular Malaysia and Australia show that Allen's (1991) "*D. fasciatus*" is in fact, referrable to *Dischistodus darwiniensis* (Whitley, 1928), a species described from northern Australia but placed in the synonymy of *D. fasciatus* by Allen (1975). In the second edition of their guide to fishes of northwestern Australia, Allen & Swainston (1993) re-identified their *D. fasciatus* (fide Allen & Swainston, 1988) as *D. darwiniensis*; but they provided no explanation for this change. Allen (1993) subsequently reinstated *Dischistodus darwiniensis* as a distinct species from northwestern Australia, briefly distinguishing it from *D. fasciatus* on the basis of colour patterning and the degree of serration on the preopercular margin. The purpose of the present paper is to provide full descriptions, synonymy and distribution of both *D. darwiniensis* and *D. fasciatus* and to document in detail their differences.

T. M. Sin, M. M. Teo, P. K. L. Ng - Department of Zoology, National University of Singapore, Kent Ridge, Singapore 0511, Republic of Singapore.

MATERIALS AND METHODS

All morphometric measurements follow Allen (1972). Measurements were taken using dial calipers to the nearest 0.1 millimetre (mm). Gill raker counts were taken by removing the first gill arch of the fish and counting all rakers on both upper and lower limbs of the arch, including rudiments.

Specimens are deposited in the Zoological Reference Collection (ZRC), Department of Zoology, National University of Singapore; Australian Museum (AM), Sydney; and Northern Territory Museum (NTM), Darwin, Australia.

TAXONOMY

FAMILY POMACENTRIDAE

Genus *Dischistodus* Gill, 1863

Dischistodus fasciatus (Cuvier, 1830)

(Figs. 1A, 4A-C)

Pomacentrus fasciatus Cuvier, in Cuvier & Valenciennes, 1830: 426, pl. 134 (Java).
Pomacentrus fasciatus: Schlegel & Müller, 1839-44: 20, pl. 4, fig. 1 (Java); Günther, 1862: 19 (Philippines, Ceram); Peters, 1868: 270 (Pulo Brani (= Pulau Brani): Singapore).
Dischistodus fasciatus: Bleeker, 1877a: 9, pl. 401 (2), fig. 8; 1877b: 86 (Pulu Brani (= Pulau Brani): Singapore, Java, Bawean, Celebes, Sumbawa (= Sulawesi), Timor, Halmarhera (= Halmahera), Buru, Amboina, Ceram, Philippines).
Pomacentrus fasciatus: Klunzinger, 1879: 397 (Port Darwin); Karoli, 1881: 173 (Singapore); Elera, 1895: 544 (Cebu); Jordan & Richardson, 1907 (1908): 263 (Ticao Islands); Weber, 1913: 341 (Sanguisiapo, Sulu Archipelago, Kangeang, Nusa Laut, Banda, Rotti).
Dischistodus fasciatus: Beaufort, 1913: 127 (Saonek).
Pomacentrus fasciatus: Fowler & Bean, 1928: 111 (Batan Island, Kenimore Island, Cebu Island, Great Tobea Island, Pilas Island, Port Caltom, St. Pascual, Burias Island, Santa Cruz Island, Marinduque, Simalus, Bisibisi Island, Sirinao Island, Surigao, Mindanao, Tataan, Simaluc Island, Tobea Island); Fowler, 1938: 188 (Pulo Brani (= Pulau Brani): Singapore); Sin et al., 1994: 53 (Singapore, Peninsular Malaysia); Allen, 1993: 25-26 (list).

Material examined. - 1 ex.(76.1 mm SL) (ZRC 12984), Pulau Salu Singapore, coll. Tay S. W., 1977. 2 ex.(89-99 mm SL)(ZRC 13005-13006), Kusu Island, Singapore, coll. C. M. Yang, 1986. - 4 ex. (57-71 mm SL)(ZRC 17402-17406), Sentosa, Singapore, coll. P. K. L. Ng & K. K. P. Lim, 1991. - 1 ex. (6.60 mm SL)(ZRC 38082), St John's Island, Singapore, coll. T. S. Sin, 1994. - 6 ex. (76-108 mm SL)(ZRC 22448-22453), Labrador Beach, Singapore, coll. P. K. L. Ng et al., 1991. - 1 ex. (98 mm SL)(ZRC 12978) Pulau Tioman, Malaysia, coll. S. W. Tay, 1977. — 1 ex. (14.05 mm SL)(ZRC 38083), Tanjong Gemal, Pulau Bintan, Indonesia, coll. P. K. L. Ng, 1993.

Diagnosis. - A species of Dischistodus with the following combination of characteristics: dorsal spines usually 13; horizontal scale rows from base of dorsal fin to middle of lateral line (exclusive of dorsal sheath scales) $2\text{-}2^{1}/_{2}$; predorsal scales reaching level of mid-orbit; preorbital and suborbital naked; head and body covered with ctenoid scales. Five vertical dark bands across the body, width of bands increasing with age. A series of prominent black spots at the angle of the operculum and the pectoral fin.

Description. - Dorsal rays XIII, 13 or 14; anal rays II, 12 or 13; pectoral rays 16-18; pelvic rays I, 5; branched caudal rays 16; gill rakers on the first arch 17-21; tubed lateral-line scales 15-18; vertical scale rows from middle of dorsal fin base to lateral line (excluding dorsal-base sheath scales) 2-$2^1/_2$; from lateral line to anal fin origin 9-$10^1/_2$; predorsal scales about 10-12, extending to above midorbits; teeth of jaws biserial, at least in front, with rounded tips.

Body moderately deep, the greatest depth 2.0-2.4 in standard length (SL) and laterally compressed. Dorsal profile of head profile convex, head length contained 3.3-3.7 times in SL. The following proportions are expressed into the head length: snout 3.5-4.0, eye diameter 3.0-3.8, interorbital width 2.9-3.1, least depth of caudal peduncle 1.7-1.9, length of caudal peduncle 2.4-3.3, of pectoral fin 1.1-1.2, of pelvic fin 1.0-1.1, of middle of caudal rays 1.5-1.8.

Single nasal opening on each side of snout; mouth oblique, terminal; lateral line gently arched beneath dorsal fin terminating $1^1/_2$ scale rows below second ray of soft dorsal; preorbital and suborbital naked; posterior limb of preopercle, interopercle, interorbital, snout, lips and chin naked; remainder of body scaled; scales finely ctenoid; preopercular scale rows 3; small sheath scales cover 1/3 to $^1/_2$ of spinous dorsal and up to 3/4 of soft dorsal, anal and caudal fins; margin of suborbital and opercular series serrate. Posterior margin of preopercle serrate in juveniles; smooth in adults, with a few blunt serrations on the lower part of the hindborder.

Origin of dorsal fin at level of 3rd tubed scale of lateral line; spines of dorsal gradually increasing in length to about 4th spine, remaining spines about equal. The following proportions are expressed into the head length: length of first dorsal spine 3.8-4.7; of second dorsal spine 3.6-4.1; of last dorsal spine 2.0-2.4; of longest dorsal ray 1.5-1.7; of first anal spine 4.8-6.5; of second anal spine 2.1-2.4; of longest anal ray 1.6-1.8.

Colouration. - Colour in alcohol pale, grading to tan ventrally. The body is transversed midway by five broad, dark bands. The first band commences from the front of the eye and extends only slightly beyond it. The second commences directly behind the opercle and extends to the 3rd dorsal spine. The third spans the 6th to the 11th dorsal spine and the fourth band, the last spine and most of the soft dorsal. The fifth band manifests as a saddle-like mark, spanning three vertical scale rows on the dorsal margin of the caudal peduncle. The first four bands tend to broaden and merge ventrally as the fish mature, such that adult specimens are predominantly brown with only narrow bands of tan. The last band appears to recede with age and is vestigial in adults. Allen (1993) notes that this peduncular bar in always incomplete in this species. A black spot marks the origin of the tubed lateral line. Some black spots appear on scales between the lateral line and the pectoral fin in variable patterns. The spiny dorsal is predominantly tan, brown where intersected by the transverse bands of the body. The soft dorsal is generally pale, with a dark patch behind the third band. The anal and caudal fins vary from light to dark brown. Pectorals are generally dusky.

Colour in life: Colour in life pale yellow, deepening ventrally. In juveniles the body is transversed by five broad, dark bands that fade towards the ventral area. The first is positioned at the level of the eye and the second from the predorsal area and running along the operculum. The third band spans the middle third of the spiny dorsal and the fourth is situated at the origin of the soft dorsal. The width of these four bands increases considerably with maturity of the fish and in adults merge ventrally to give a generally dusky appearance with paler bars on the back. The fifth band is always incomplete, vestigial in adult fish, and is located midway along the upper margin of the caudal peduncle. A small white spot may be observed in the middle of the third band, at the base of the dorsal. A few black spots present at the angle of the operculum and the pectoral. Colour illustrations of the species can be found in Bleeker (1877b: Tab. 401, fig. 8), Schlegel & Müller (1939-44: pl. 4, fig. 1), Kuiter (1992: 13, fig. E) and Lim et al. (1994: 51) (both adult and young).

Distribution. - We have not come across any specimens of *D. darwiniensis* in the material examined from Peninsular Malaysia and Singapore. The specimens of *D. fasciatus* described by Günther (1862) and Fowler & Bean (1928) agree very well with our definition of *D. fasciatus*. Fowler & Bean (1928) cite the teeth as being uniserial but we have found that a biserial condition prevails at the front of the jaws. The *D. fasciatus* figured in Kuiter (1992) from Flores are also referrable to *D. fasciatus* sensu stricto. *Dischistodus fasciatus* thus seems to range from Peninsular Malaysia to western Indonesia and the Philippines.

Ecology. - This species is a typically shallow water fish inhabiting lagoons, reef and rocky flats. It occupies a depth range from the reef flat to the sub-littoral and littoral zone. Juveniles and subadults are commonly found tide pools at low tide, which seems to indicate that they forage with the tidal flow. Adult fish inhabit a fairly fixed range, but unlike other members of the genus are not aggressive and have been observed foraging with other fish species, namely *Abudefduf*. Predominant natural forage consists of algae, but we have not observed the species maintaining algal turfs, as is common in other members of this genus.

Remarks. - *Dischistodus fasciatus* was described by Cuvier (in Cuvier and Valenciennes, 1830) as *Pomacentrus fasciatus* from a single specimen collected from Java. The description cited it as being a large fish, with a finely denticulated suborbital and a strong preopercle. Four vertical pale bands traverse the body, the first commencing at the nape, the second behind the pectoral, the third under the origin of the soft dorsal, and the fourth behind the dorsal, at the junction of the back and the caudal peduncle. Cuvier also noted and figured a small "ear" spot at the origin of the lateral line and three or four other spots at the angle of the operculum and the pectoral. Bleeker (1877a) subsequently reported the fish from various localities in Southeast Asia and provided an excellent colour figure of the species (1877b). The descriptions and figure of *D. fasciatus* provided by Bleeker (1877a, b) agree well with those of Cuvier (1830) as does the colour figure in Schlegel & Müller (1939-44).

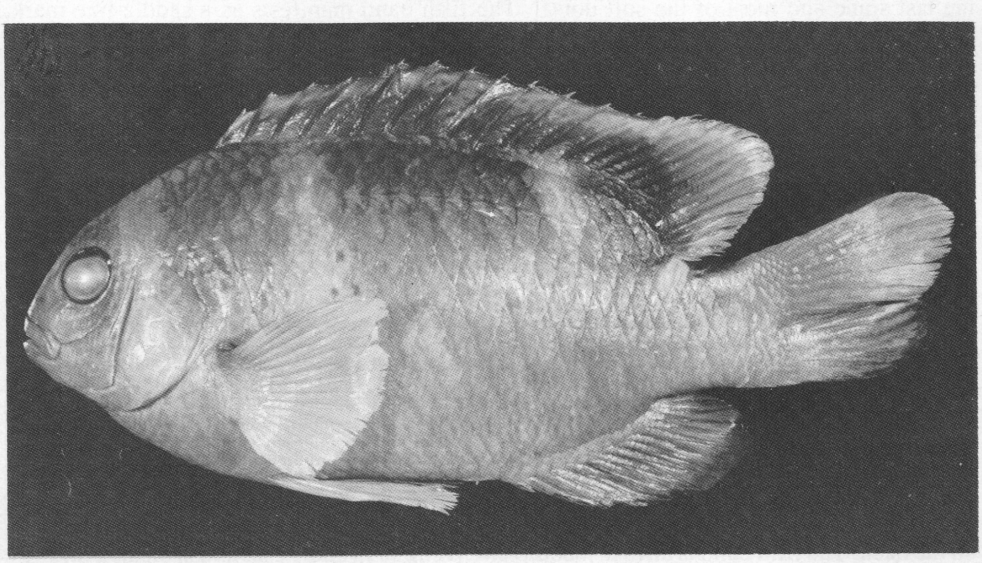

Fig. 1. *Dischistodus fasciatus*, ZRC 22448-22453, 108.3 mm SL, Singapore.

Table 1. Morphometric and meristic data for *Dischistodus fasciatus* and *D. darwiniensis*, N = 10.

	D. fasciatus	*D. darwiniensis*
Standard length (mm)	14.1-108.0	9.3-91.2
	ratio in standard length	
Head length	3.3-3.7	3.2-3.7
Body depth	2.2-2.4	2.1-2.2
	ratio in head length	
Snout length	3.5-4.0	3.5-3.9
Diameter of bony orbit	3.0-3.8	2.8-3.3
Interorbital width	2.9-3.1	2.8-3.3
Least depth of caudal peduncle	1.7-1.9	1.8-2.1
Length of caudal peduncle	2.4-3.3	2.8-3.1
Length of pectoral fin	1.1-1.2	1.0-1.2
Length of pelvic fin	1.0-1.1	0.9-1.1
Length middle caudal rays	1.5-1.8	1.2-1.4
Length of 1st dorsal spine	3.8-4.7	3.6-3.9
Length of 2nd dorsal spine	3.6-4.1	2.8-3.5
Length of last dorsal spine	2.0-2.4	1.7-2.5
Length of longest dorsal ray	1.5-1.7	1.1-1.4
Length of 1st anal spine	4.8-6.5	4.2-4.5
Length of 2nd anal spine	2.1-2.4	1.9-2.4
Length of longest ray	1.6-1.8	1.4-3.0
	Counts	
Dorsal	XIII, 13 or 14	XIII, 13
Anal	II, 13	II, 12 or 13
Pectoral	16 or 17	17
Pelvic	I, 5	I, 5
Caudal	16	16
Gill rakers	17-21	16-19
Lateral line scales	17 or 18	17 or 18
Vertical scale rows	26-28	26 or 27
Predorsal scale number	10-12	14-20
Number of scale rows on preopercle	3	3
Number of scale rows (from base of dorsal to lateral line)	2-2$^1/_2$	1-1$^1/_2$
Number of scale rows (from lateral line to anus)	9-10$^1/_2$	9

Dischistodus darwiniensis was first described by Macleay (1878) as *Dascyllus fasciatus* from a single juvenile specimen from Port Darwin. He briefly described the fish as having a body depth of approximately half the length, and five black bands on the body, with the first band positioned on the head and the last on the tail. Whitley (1928) transferred *Dascyllus fasciatus* to *Pomacentrus*, and proposed a replacement name *Pomacentrus darwiniensis* as the name was already occupied by *Pomacentrus fasciatus* Cuvier, 1830. Whitley redescribed Macleay's type as having a smooth preorbital margin and a strongly denticulated preopercle.

Table 2. Morphological data of *Dischistodus fasciatus* and *D. darwiniensis*

	D. fasciatus	*D. darwiniensis*
Predorsal scale extension	to mid-orbit	to level before nares
Condition of suborbital margin	smooth	smooth
Condition of suborbital margin (adult)	finely denticulated	finely denticulated
Condition of preopercle margin (juvenile)	finely serrated	strongly serrated
Condition of preopercle margin (adult)	smooth, with three or four strong spines at base of hindborder	strongly serrated
Termination of lateral line	$1^1/_2$ scale rows below 1st and 2nd dorsal ray	1 scale row below 1st and 2nd dorsal ray
Scalation on snout, lips, and chin	naked	naked

It also had a dark spot on the posterior part of the spiny dorsal and a smaller one on the soft dorsal. *Pomacentrus darwiniensis* was subsequently missed by most researchers, and was not listed (even as synonyms of other species) by Weber (1913), Fowler & Bean (1928), Fowler (1938), de Beaufort (1940) and Herre (1936) in their treatments of the Pomacentridae.

In his review of the pomacentrid fishes of the central and western Pacific, Allen (1975) placed *Pomacentrus darwiniensis* Whitley in the synonymy of *Dischistodus fasciatus* (Cuvier). He examined Macleay's holotype and concluded that it is a juvenile of *D. fasciatus*. He also transferred *P. fasciatus*, *P. chrysopoecilus*, *P. melanotus*, *P. pseudochrysopoecilus*, *P. prosopotaenia* and *P. perspicillatus* to the genus *Dischistodus* Gill, 1863, based mainly on the basis of the absence of a notch on the margin of the suborbital bone, which is prominent in most species of *Pomacentrus* s. str.

Dischistodus fasciatus and *D. darwiniensis* are superficially similar but clearly not conspecific. They can be separated mainly on the structure of the margin of the preopercle and the extent of the predorsal scalation. In *D. fasciatus*, the predorsal scales extend to midorbital level; in *D. darwiniensis* they reach a level just before the nares. The preopercle is strongly serrate in all growth stages of *D. darwiniensis* while juvenile *D. fasciatus* have fine serrations on the preopercle. Adult *D. fasciatus* display an unusual preopercle condition, smooth for most of the hindborder, with three or four serrae near the base of the preopercle. They both display a certain degree of juvenile-adult dimorphism, namely, a variation in preopercle and suborbital condition (serrate or smooth) with size. Juveniles of both species have a smooth suborbital border. Adults, however, have a finely denticulate suborbital margin, while the subadults have an intermediate condition. Head shape also differs between the two species, with *D. fasciatus* having a markedly convex profile (Fig. 4A) compared to *D. darwiniensis*. The dorsal head profile in the latter fish has a more gentle slope (Fig. 4D).

Dischistodus fasciatus has been a fairly stable taxon, the only changes in its history being a generic change from *Pomacentrus* to *Dischistodus*. The most striking visual difference between *D. fasciatus* and *D. darwiniensis* is the constant presence of a series of black spots behind the upper part of the opercle and above the pectoral fin. These spots are found in all growth stages of the fish in Peninsular Malaysia and Singapore.

A subspecies described by Weber (1913), *Pomacentrus fasciatus* var. *intermedia*, has been synonymised with *D. chrysopoecilus* Schlegel & Müller, 1939-44 (see Allen 1991). The authors agree with this action as the description and plate given by Weber (1913) agree very well with the original description in Schlegel & Müller (1939-44).

Dischistodus darwiniensis (Whitley, 1928)

(Figs. 2A, B, 3, 4D-F)

Dascyllus fasciatus Macleay, 1878: 361 (Port Darwin: Australia).
Pomacentrus fasciatus: Klunzinger, 1879: 397 (Port Darwin: Australia).
Pomacentrus darwiniensis Whitley, 1928: 297 (Port Darwin: Australia).
Dischistodus fasciatus: Allen, 1975: 131 (East Indies, Philippines, northern Australia); Allen & Swainston, 1988: 102-103, pl. 42 no. 654 (northwestern Australia); Allen, 1991: 110 (Indo-Australian Archipelago including Indonesia, Philippines, northwestern Australia).
Dischistodus darwiniensis: Allen & Swainston, 1993: 102-103, pl. 42 no. 654 (northwestern Australia); Allen 1993: 25-26 (northwestern Australia).

Material examined. - 16 ex. (9.3-91.2 mm SL)(ZRC 37473-37488), Vestey's Beach, Darwin, Australia, coll. H. Larson et al., 1982. - 3 ex. (11.3-13.8 mm SL)(NTM S 10431-007), Danger Point, Coburg Peninsula, Australia, coll. B. C. Russell, 1982. - 2 ex. (10.1-12.4 mm SL)(NTM S 10595-016) McMluer Island, Australia, coll. H. Larson, 1982. - 5 ex. (21.2-33.1 mm)(AM I 24678014), Darwin, East Point, Australia, coll. D. Hoese & S. Reader, 1984. - 3 ex. (47.4-76.3 mm SL)(AM IA 7797-9), Melville Island, Cape Keith, Australia, coll. M. Ward. - 1 ex. (24.6 mm SL)(AM I 17683001), Dudley Island, Darwin, Australia, coll. E. Pope, 1965. - 2 ex. (30.4 mm & 59.0 mm SL)(AM A 30-31), N.W. coast of Australia, coll. Capt. R. N. Walcott.

Diagnosis. - A species of Dischistodus with the following combination of characteristics: dorsal spines usually 13; horizontal scale rows from base of dorsal fin to middle of lateral line (exclusive of dorsal sheath scales) 1-$1^1/_2$; predorsal scales reaching level just before nares; preorbital and suborbital naked; head and body covered with fine, ctenoid scales.

Description. - Dorsal rays XIII, 13 or 14; anal rays II, 12 or 13; pectoral rays 17; pelvic rays I, 5; branched caudal rays 16; gill rakers on the first arch 16-19; tubed lateral line scales 17 or 18; vertical scale rows from middle of dorsal fin base to lateral line (excluding dorsal base sheath scales) 1-$1^1/_2$; from lateral line to anal fin origin 9; predorsal scales about 14-20, extending beyond the orbit to a level before the nares; teeth of jaws biserial, at least in front, with conical tips.

Body moderately deep, laterally compressed, the greatest depth about 2.1-2.2 in SL. Head profile convex, head length contained 3.2-3.7 times in SL. The following proportions are expressed into the head length: snout 3.5 -3.9, eye diameter 2.8-3.3, interorbital width 2.8-3.3, least depth of caudal peduncle 1.8-2.1, length of caudal peduncle 2.8-3.1; of pectoral fin 1.0-1.2 of pelvic fin 0.9-1.1, of middle of caudal rays 1.2-1.4.

Single nasal opening on each side of snout, mouth oblique, terminal; lateral line running almost parallel to the dorsal fin terminating 1 scale row below the first or second ray of the soft dorsal; preorbital and suborbital naked; preopercle, interopercle, interorbital, snout, lips and chin naked; remainder of body scaled; scales finely ctenoid; preopercular scale rows 3; small sheath scales cover $^1/_3$ to $^1/_2$ of spinous dorsal and up to $^3/_4$ of soft dorsal, anal and caudal fins; margin of suborbital smooth in juveniles, a few distinct serrations present in subadults and adults; margin of preopercle and preopercular series serrate.

Origin of dorsal fin at level of 3rd tubed scale of lateral line; spines of dorsal gradually increasing in length until 4th spine, remaining spines about equal. The following proportions and expressed into the head length: length of first dorsal spine 3.6-3.9; of second dorsal spine 2.8-3.5; of last dorsal spine 1.7-2.5; of longest dorsal ray 1.1-1.4; of first anal spine 4.2-4.5; of second anal spine 1.9-2.4; of longest anal ray 1.4-3.0.

Colouration. - Colour in alcohol tan, with five brown bands. The first band is situated across the eye, extending slightly beyond the level of the orbits. The second band begins directly behind the preopercle, stretching to the second spine of the dorsal. The third band is slightly narrow, spanning the 5th to 7th dorsal spines. The fourth band is found on the 8th to 14th ray of the soft dorsal. The final band is located three vertical scale rows before the

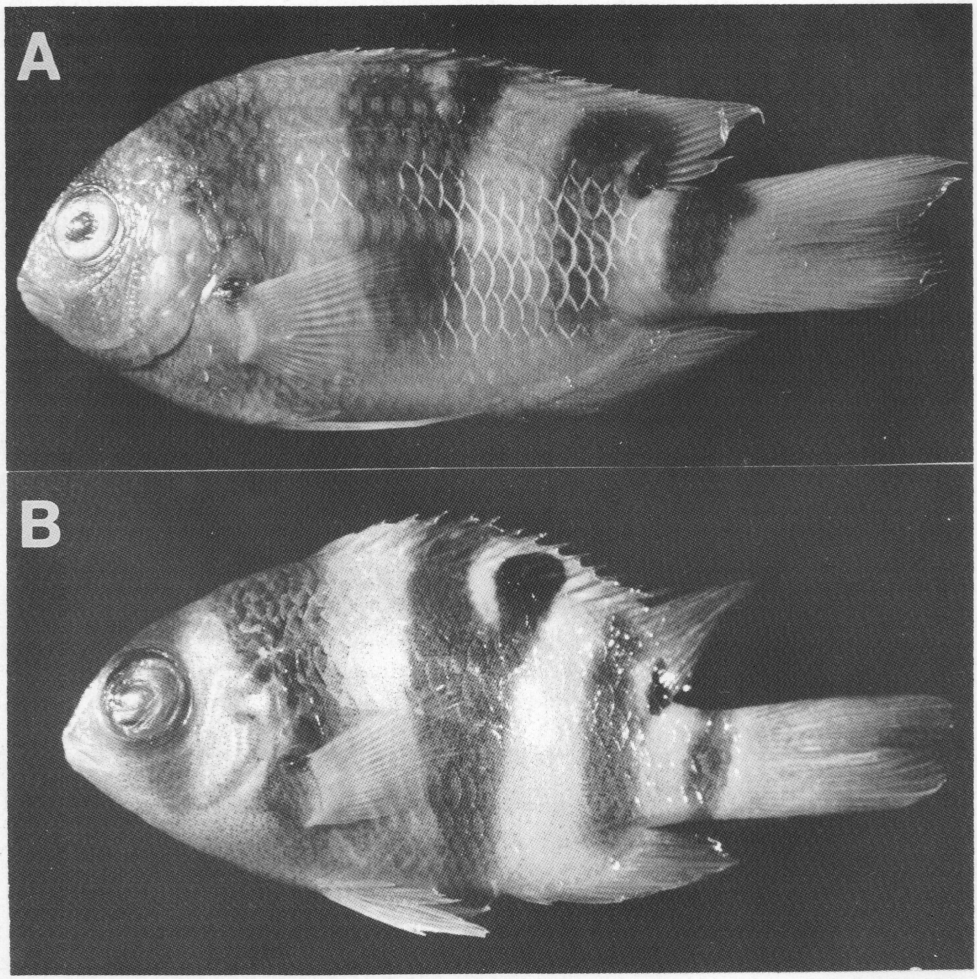

Fig. 2. *Dischistodus darwiniensis*. A, ZRC 37474-37488, 40.4 mm SL, Australia; B, AM I 24678014, 21.4 mm SL, Australia.

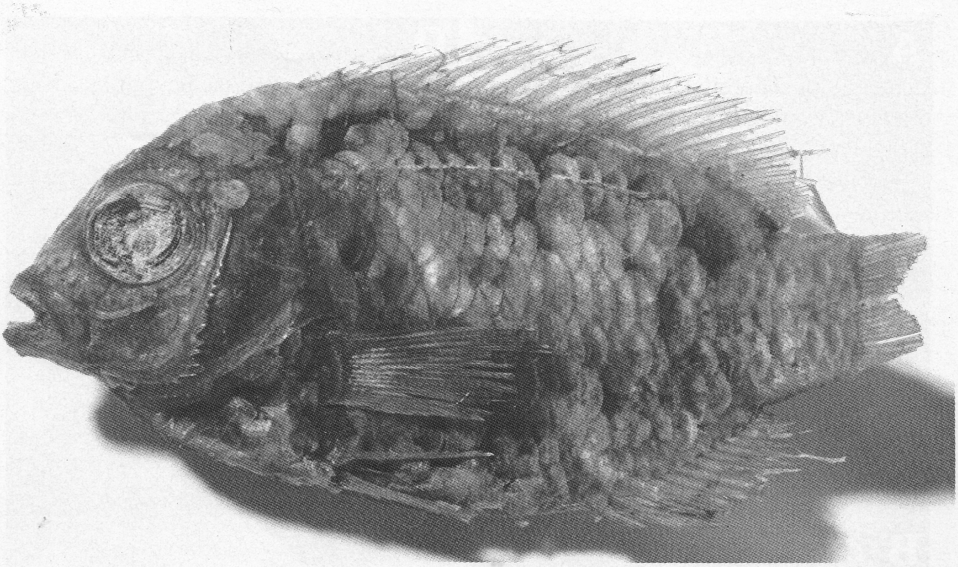

Fig. 3. *Dischistodus darwiniensis*, holotype, AM I 163557-001, Australia.

caudal fin origin. Allen (1993) notes that this peduncular bar is always complete in specimens under 40 mm SL. As with D. fasciatus, the body bands widen and merge with maturity, resulting in adult fish being largely brown. A small, dark "ear" spot is present at the origin of the lateral line. Another black spot marks the upper corner of the pectoral fin base. The anus is black. Two black blotches appear dorsally on juveniles, one adjoining and intersecting the third body band (9th to 11th dorsal spine). This blotch commonly fades with age and may be absent in adults. The other occurs behind the fourth body bar and occupies the 8th to 14th rays of the soft dorsal. The fins are dark at the margins, fading proximally.

Colour in life (based on a colour slide): Body predominantly white, with a yellow dorsal area. Body transversed by five dark irregular bands extending from the dorsal fin towards the ventral. The bands tend to fade proximal to the belly. The first band commences at the level of the front of the orbit, and includes the eye. The second stripe begins forward of the dorsal origin and includes the pectoral base. The third band commences at the last third of the spinous dorsal and extends towards the anus of the fish. The fourth and fifth bands originate from the middle of the soft dorsal and at the end of the caudal peduncle respectively. Two fairly large, black blotches are located on the body, the first intersecting the third body band and extending into the dorsal fin. This blotch appears to fade in adults. The second blotch is somewhat smaller, and is located just posterior to the fourth band, projecting slightly into the soft dorsal. Allen (1993) comments that adult specimens tend to be plain brownish, this blotch being the only characteristic marking. He also notes an absence of white bars on the back , which are characteristic of adult D. fasciatus. The pelvic and anal fins have a light bluish tinge, while the other fins are hyaline. Colour illustrations are provided in Allen (1991: 110) and Allen & Swainston (1992: 102, pl. 42, fig. 654).

Distribution. - From the published records (mostly as *D. fasciatus*), *D. darwiniensis* is known thus far only from northwestern Australia.

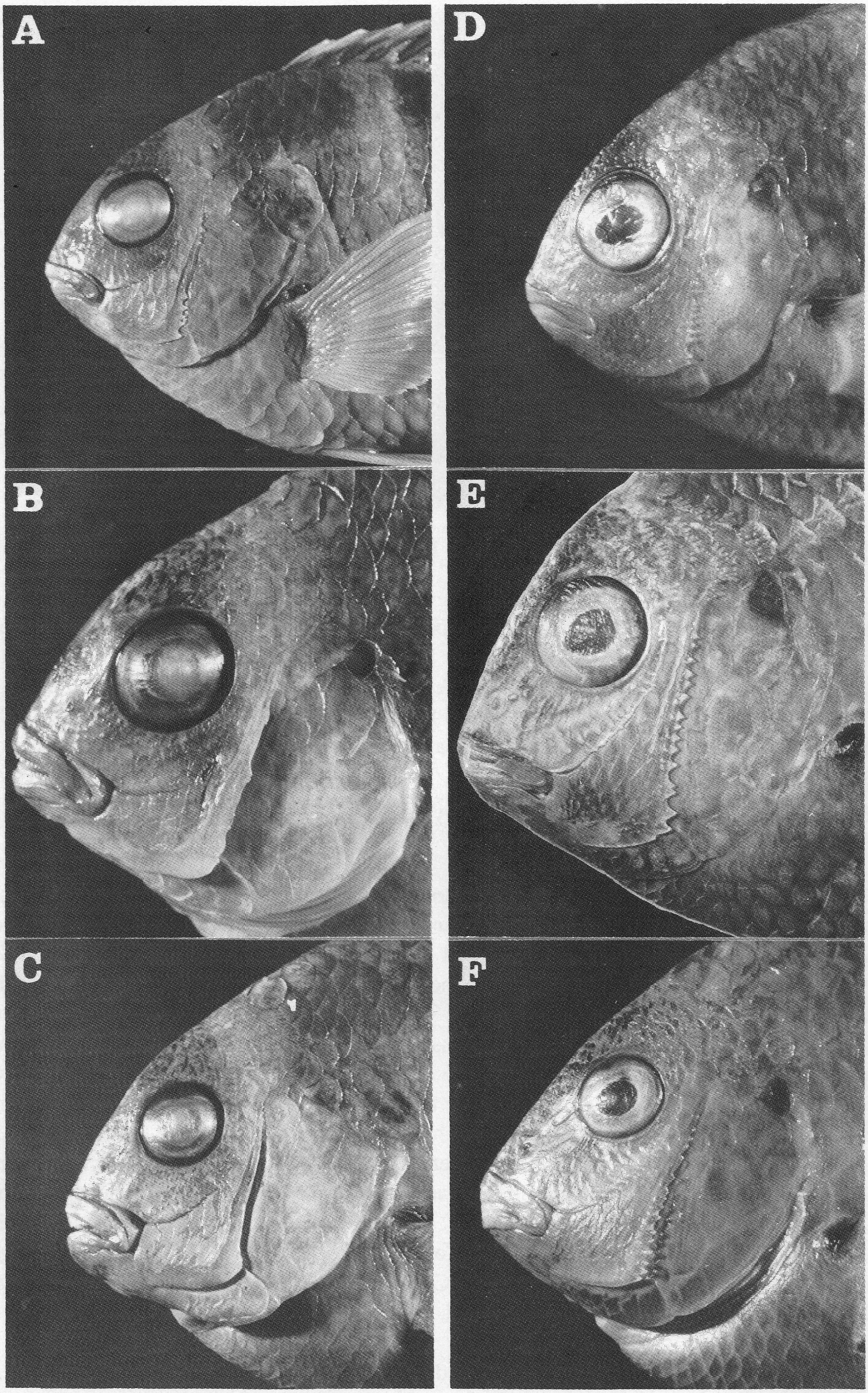

Fig. 4. Suborbital and preopercle conditions. A-C, *Dischistodus fasciatus*, ZRC 22448-22450, Singapore; D-F, *D. darwiniensis*, ZRC 37474-37476, Australia. A, 78.5 mm SL; B, 84.9 mm SL; C, 108.3 mm SL; D, 40.4 mm SL; E, 80.1 mm SL; F, 91.2 mm SL.

Ecology. - Similar to that described for *D. fasciatus*. Rex Williams (NTM) notes that this fish is exceedingly common in northwestern Australia (pers. comm.) and collection data show that it inhabits shallow waters; with most of the fish collected from 0.0 to 1.0 m of water.

Remarks. - The differences between *D. darwiniensis* and *D. fasciatus* have already been discussed in detail under the ***Remarks*** section of *D. fasciatus*. Gerald Allen (pers. comm.) checked his Australian specimens previously assigned to *D. fasciatus*, and confirmed that they are *D. darwiniensis* as defined here (see also Allen, 1993).

In addition to the specimens of *D. darwiniensis* examined, Mark McGrouther kindly provided data on the holotype (AM I 163557-001) in the Australian Museum and sent us photographs of the specimen (Fig. 3). The meristic data and morphometric measurements of the type agree very well with the present definition of *D. darwiniensis*.

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